

# CANADIAN GEOGRAPHICAL JOURNAL

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# CANADIAN GEOGRAPHICAL JOURNAL

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Editor - GORDON M. DALLYN

This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustrations, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth and other parts of the world in which Canada has special interest.



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Photo by Herbert Lanks

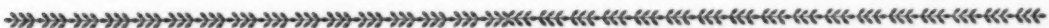
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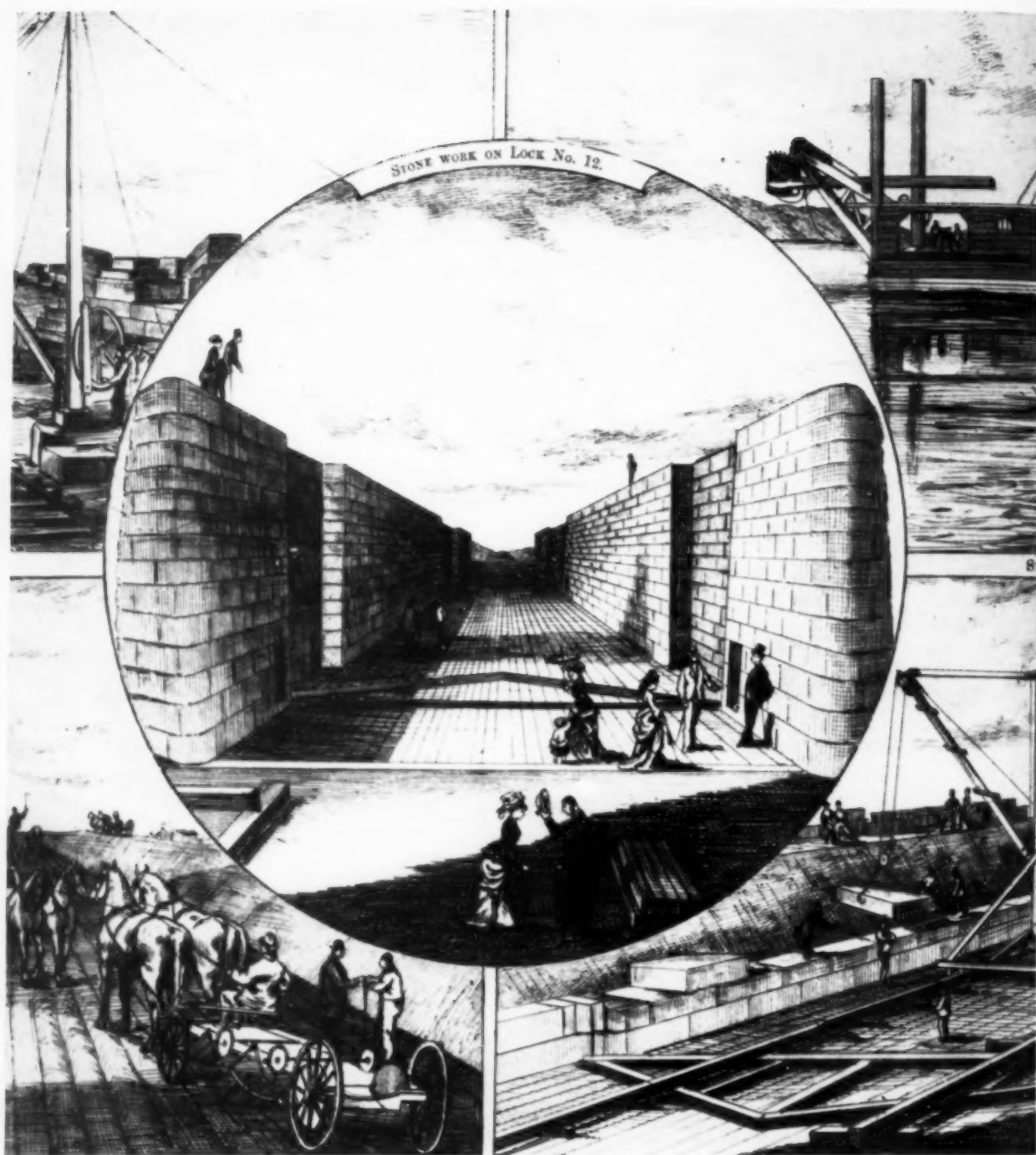


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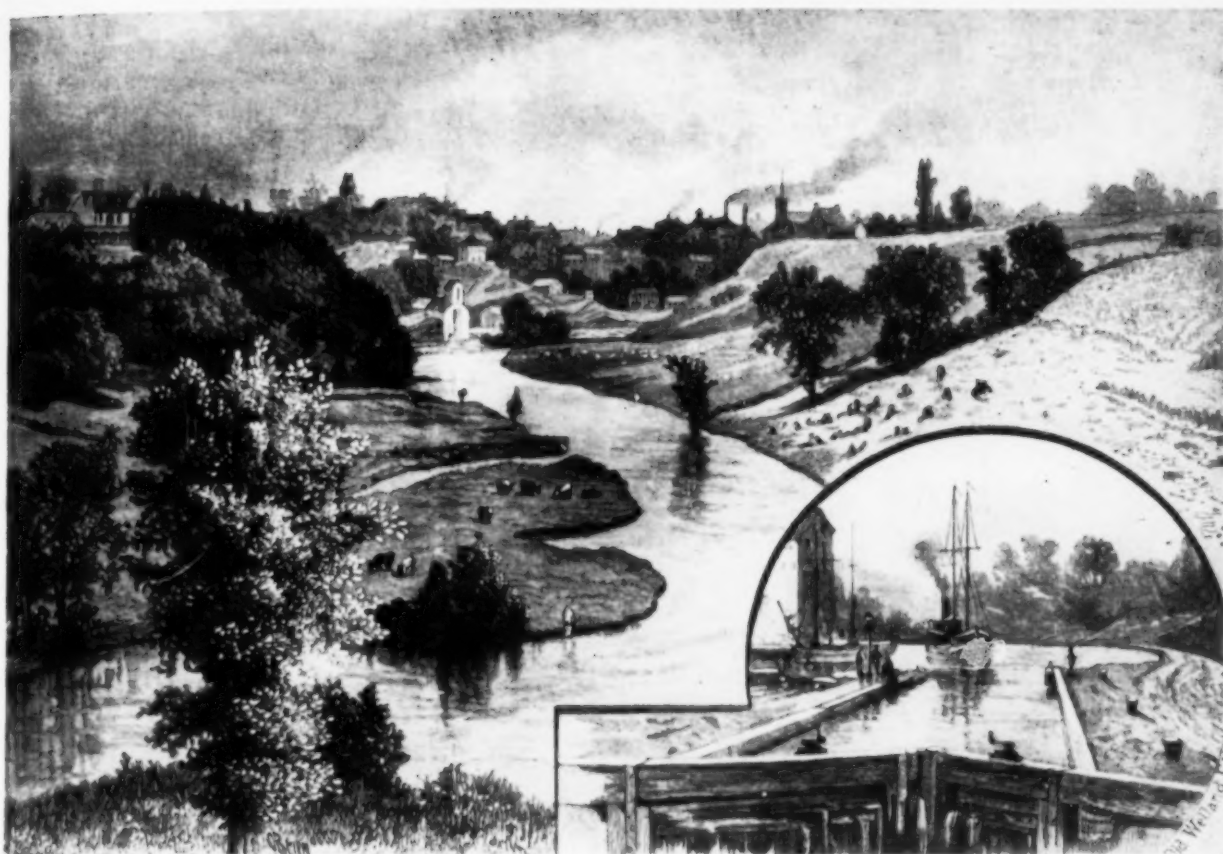


*Scenes at the construction of the third Welland Canal. From sketches by C. J. Dyers in Canadian Illustrated News, January, 1876.*

*Right:—The river at St. Catharines and (inset) part of the old Welland Canal. From Picturesque Canada.*

Photos courtesy Public Archives of Canada





## **The Welland Canal**

by LYN and RICHARD HARRINGTON\*

\*Photography throughout (with the exception of photos from the Public Archives of Canada) by Richard Harrington for the *Canadian Geographical Journal*.

**W**HERE NIAGARA'S jade-green waters hurl themselves over their precipice to surge down through the gorge, Nature presents one of her greatest challenges to the builders of a nation. In its 28-mile length from Lake Erie to Lake Ontario, the Niagara River drops 326 feet, half of its plunge at the spectacular Niagara Falls.

That mighty cascade wreathed in spray held back navigation for many a year after the first explorers gazed on it in awe mixed with exasperation. The turbulent stream cutting its way deep through the canyon was a tide which no canoe could stem.

Lake Ontario locked in with rapids at either end, has been unlocked by triumphs of engineering. Through the more than 2,000 miles from the Gulf of St. Lawrence to

the head of the Great Lakes, the little tramp steamers of the world ply their trade. Small canals overcome the rapids on the upper St. Lawrence River, bringing traffic of the world in to the freshwater ports.

In the days of the fur brigades, portages could be made around those lesser rapids without too much difficulty, or canoes could be "lined up" from the shore. Niagara Falls, over which the freshwater seas and rivers innumerable poured their drainage, presented a vastly greater impediment.

Portage trails on either side of the Falls carried freight and birchbark canoes. A road from Queenston to Chippawa was opened in 1791, but was expensive in manpower and in toll charges. Moreover, it was risky due to the activities of bandits.



Left and right:—  
Two old-time  
views on the Wel-  
land Canal  
Photos courtesy Public  
Archives of Canada

But mechanical genius and determination patiently solved the problems presented. In one century, four canals have been built connecting the waters of Lake Erie and Lake Ontario. Freighters of the lakes and of the oceans today climb the limestone barrier on stairs of water.

### The Early Days

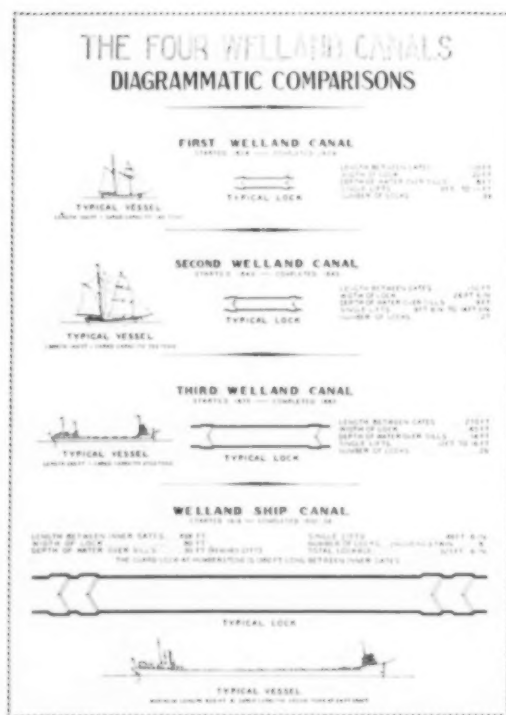
First white man to gaze upon the impressive obstacle to navigation was the brown-frocked friar, Father Hennepin. He ac-

companied La Salle on his westward voyage, and helped in the construction of the *Griffin*, the first sailing vessel to ply the upper lakes. With customary exaggeration, he reported the Falls to be some 600 feet in height!

Louis XIV's engineer, De la Mothe, believed in 1710 that a canal could be built to bypass the dreaded Falls. A small canal had been constructed at Lachine, just outside Montreal ten years before. "True," admitted his superiors, "but a canal around the Falls of Ongiara? Preposterous!" No one in the French court considered it possible or profitable to cut a canal across such a formidable barrier of rock. For a century the subject was dropped.

Rivers and lakes provided the natural highways throughout the undeveloped country. Roads were few and poor, bogged down with mud, or rough with stones and pot-holes. Water transportation was cheap and ready to hand. Canals were obviously necessary for the development of the country.

The eighteenth and nineteenth centuries saw a vigorous growth of canal systems, both in the United States and in Canada. A partial canal was built at Lachine in the years from 1700 to 1733. Work was begun on the Soulange, also on the St. Lawrence, in 1777. The North West Company built a canal at Sault Ste. Marie in 1797 to over-



Types of locks on the four Welland Canals  
between 1824 and 1933, and the vessels using  
them.



come the rapids of St. Mary's River, for the safe passage of their fur bateaux. Canals on the Ottawa River, and the Richelieu, across Ontario utilizing the Rideau River, and the Trent Waterway System followed.

Energetic Governor Simcoe of Upper Canada agitated for a canal to replace the rough road above the Niagara Falls. In 1799 a bill to construct a canal from Chippawa to Fort Erie passed two readings, but it aroused such a storm of protest from the people, who feared a monopoly, that it never became law. Instead, the wagon road was improved.

Sailing vessels did manage to get around the Falls, but only by man's sweat and strain. In 1810, a vessel of 100 tons was placed on skids and in winter was hauled over the Portage Road down the mountain at Queenston and launched in the Niagara River there. On at least two other occasions during the War of 1812, transport boats of considerable size were taken up the escarpment and launched at Chippawa for service on Lake Erie—no mean undertaking.

Immediately after the war, the Americans commenced the barge canal connecting Lake Erie with the port of New York, by way of the Mohawk Valley. This would mean that goods coming from the upper lakes would be trans-shipped at Buffalo, and the traffic drained through American canals to American ports. This project was viewed with alarm by Canadians, and patriotic feeling ran high. The future development of Canada was bound up with the Lake On-

tario-St. Lawrence highway to the Atlantic.

Enthusiasm for the construction of a canal on Canadian territory was whipped up. It was to be placed well back from the frontier which American troops had overrun a few short years before. Those in authority had misgivings, some even to the extent of hampering the venture. But a few men of the Niagara Peninsula, notably William Hamilton Merritt, pushed on the project. A private company was formed, stock sold, and the first sod was turned in November of 1842.

#### *The Barrier is Conquered*

The first Welland Canal began at Twelve Mile Creek, back from the frontier. The builders utilized natural water-courses as much as possible to save expense and labour. The route led up the Twelve Mile Creek from Port Dalhousie on Lake Ontario, following its wavering course to the escarpment. Here a "deep cut" had to be made across the height of land to the waters of the Chippawa Creek (sometimes known as the Welland River). Another long channel led from the Grand River 27 miles away, to serve as a feeder.

Five years later, two small schooners made the first water passage between the lakes. Slowly they passed up the little canal with its forty wooden locks, its shallow draft of eight feet, and its narrow 22-foot prisms. From the "deep cut" they turned into Chippawa Creek, and thus down into the Niagara River.

This route was followed for the next four years. Usually sailing vessels had to be



towed up the Niagara against its strong current and unfavourable winds. A "horned breeze" as the sailors called it, was provided by eight to fourteen yoke of oxen dragging from the tow-path. Ice jams in early spring also held up navigation. An extension of the canal was therefore necessary. It was made directly south of Port Robinson on the Chippawa Creek, to Lake Erie, a tremendous undertaking. Miles of rock had to be penetrated with the simple tools of those days. The low waters of the creek were led below the canal by an aqueduct. To hinder matters further, an epidemic of cholera broke out, killing many of the labourers.

The new water highway was widely touted in order to bring settlers and trade development to the Niagara Peninsula. In short order, grist and saw mills, potteries and tanneries, cement plants and soap factories sprang up along its banks, using the water power and taking advantage of the transportation provided.

Almost as soon as the first canal was completed, the need was seen for a larger one. In 1842, the provincial government of Upper Canada bought all the shares, and immediately set to work enlarging and straightening out the canal. Today, only a few remnants of the first locks may be seen, the great squared oak timbers still showing the marks of the adze.

In three years the work was completed, enabling sailing vessels of 750 tons cargo capacity to pass from lake to lake. It was the heyday of the sailing vessels. Schooners predominated, with a following of barques, brigs, sloops and scows. There were some steamers with their exposed side paddle wheels, and the number of screw propellers increased steadily.

*Top to bottom:—*

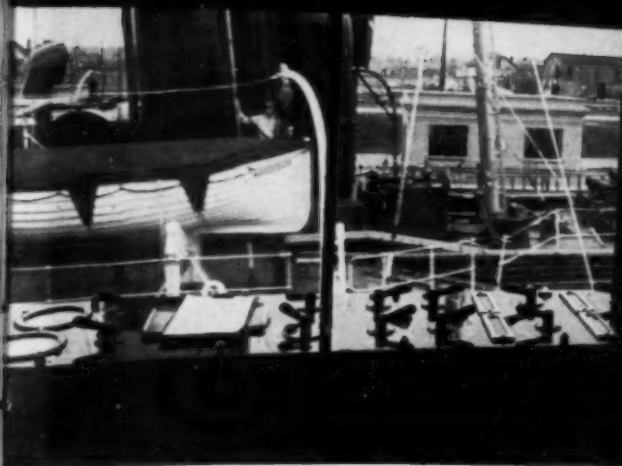
*One of the oldest sites of the Welland Canal. These remnants of the first lock still show the marks of the adze on the squared oak timbers.*

*Masonry walls and wooden locks of the second Welland Canal, to the west of Thorold. Birds nest in the decaying timbers of the old gates.*

*The gates are gone from the flight locks of the third canal, where they mounted the escarpment to the east of Thorold, but its ruins are picturesque.*

*Rapids in a by-pass channel at Merriton, now used only for power purposes.*





*Left:—All operations must be performed in exact sequence to lock a boat through, in order to prevent any disaster or damage to equipment.*

*Below:—A freighter in Lock 4, the first of the flight locks, bound through to Lake Erie. Each of these lift locks raises the vessel 46½ feet and fills in 8 minutes.*

The canal had a 9-foot draft. Twenty-seven locks built of fieldstone, with wooden gates, replaced the numerous locks of the first canal. Scores of horses and mules were employed in towing boats and barges through the canal, a tedious passage. Paper mills sprang up, along with other industries. The new canal gave considerable impetus to industry, and caused some shifts in population.

When the third canal was built, part of this second canal was abandoned. Converted into hydraulic raceways, its waters are now used by numerous paper mills and other industries along its banks. Birds nest in the decaying timbers of the old wooden lock gates, and muskrats tunnel their dens in its reaches.

Confederation of the provinces in 1867 placed inland waterways under federal jurisdiction. The third canal was therefore a much more ambitious project. It was begun in 1873 and was fourteen years ago. The number of locks was slightly reduced, the canal was widened to 45 feet, almost twice its previous width, and the draft was deepened to 14 feet. The canals on the St. Lawrence were deepened and widened correspondingly, thus providing a gateway to the upper lakes for ocean vessels of that day.

The course of the third canal utilized much of the previous channel, but swung to the east of Thorold, in a flight of locks designed to carry vessels over the escarpment. Steam-driven freighters of 2700 tons cargo capacity, and requiring a depth of 14 feet, shuttled back and forth through the canal. The volume of shipping grew steadily year



by year. By 1928, seven and a half million tons of water-borne freight were passing through the Welland Canal yearly.

As the shipments of wheat and ore from the head of the lakes increased, larger ships were needed to carry this freight economically. Trans-shipment to smaller boats at the Welland Canal was costly. The canal had become a bottle-neck to navigation. To remedy this situation the fourth, or Welland Ship Canal, was planned. During the years of its construction, the third canal was maintained in operation. Part of its course was retained, much of it abandoned. Some of it has been filled in; part serves as supply





*Two vertical-lift bridges in position as a freighter heads down the canal at Port Colborne. One is a highway, the other a railway bridge.*

weir and pondage for the fourth canal. Near Thorold, east of the ship canal, may be seen the old flight of locks. The masonry walls are chinked with grasses and moss, and a quiet atmosphere of forgetfulness lies over the picturesque ruins.

#### *The Welland Ship Canal*

Work on the new Welland Canal was on heroic proportions. The canal must be built to look after more than existing vessels, large enough for the needs of several generations. The Dominion of Canada therefore in 1913, took steps to construct such a channel. Work began that year, and carried on until halted by World War I.

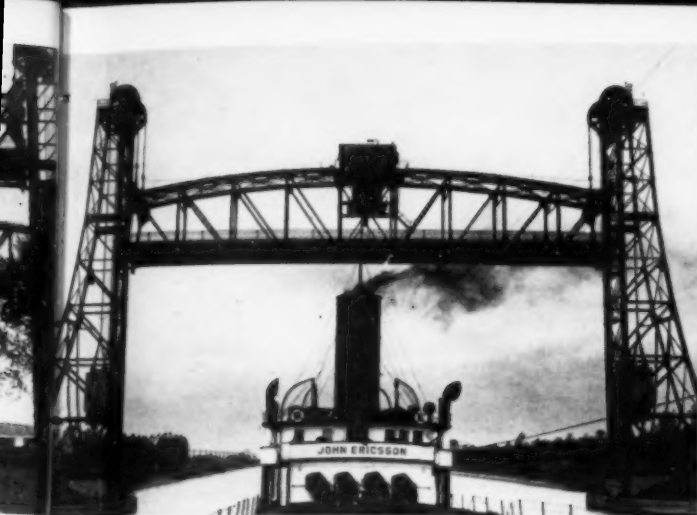
Unsettled conditions and high prices held up construction for a time. Engineering problems demanded the utmost care and consideration, but all were met and solved. It was not, however, until 1932 that the Governor-General of Canada, the Earl of Bessborough, officially opened the Welland Ship Canal. "I hereby declare the Welland Ship Canal open to the commerce of the world," he said gravely as he turned the lever.

*Left, top to bottom:—*

*The vertical-lift bridge is a main thoroughfare at Port Colborne.*

*The great wire ropes wind up on sheaves as the bridge goes up in order to permit passage of ships.*

*A freighter from Norway passes under the vertical-lift bridges, one of which is already on its way down. They give a clearance of 120 feet from the surface of the water.*



*The vertical-lift bridge descends immediately the vessel has passed beneath. Heavy weights and great chains counterbalance the weight of the bridge itself.*

The course was radically changed at the Lake Ontario end of the canal, so that it runs practically in a straight line across the Peninsula, a distance of nearly 28 miles. An expenditure of \$130 million has been justified in the increased tonnage, which in 1945 was almost twice that of the best years of the previous canal. Especially during the war years was the canal a vital artery to Canada and the United States.

The ship canal starts at Ten Mile Creek, three miles east of its former entrance. An artificial harbour was built and excavated to a depth of 25 feet, which may be deepened by dredging. Embankments a mile and a half long reach out into Lake Ontario to protect the entrance to the canal. Temporary railway tracks were laid down during construction to bring rock and earth from the excavations farther up the canal. The ends and inner sides of the embankments are reinforced with concrete.

The new canal has a width of 80 feet in the locks, and is much wider in the canal reaches, 310 feet being the narrowest. The depth of water over the sills in the locks is 30 feet,



*Right, top to bottom:—*

*The fender-boom raised at lift lock No. 3. Beyond it can be seen the double bascule bridge of the Queen Elizabeth Highway.*

*The bascule bridge in place at Humberstone. The striped poles swing down barring traffic when the bridge is about to open.*

*A "whaleback" passes up the canal between the leaves of the double bascule bridge on the Queen Elizabeth Highway.*





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## THE WELAND CANAL

providing for well over the needs of present-day navigation. Seven lift locks and one guard lock have replaced the forty tiny locks of the first canal. The lift locks have a usable length of 820 feet, and lift the ships 46½ feet at each lock.

Safety devices are used throughout the canal. Radiophones, telephones, special construction of the massive gates, and steel fender-booms reduce the danger of accidents in the canal. Moreover all controlling machinery operating the valves, gates, fenders and signals is so electrically interlocked as to protect the equipment of the locks and prevent disasters.

Twenty highway or railway bridges span the Welland Canal. Eleven are of the vertical-lift type, whereby the bridge rises horizontally into the air, between tall towers, giving a clearance of 120 feet from the surface of the water. They move surprisingly quickly with heavy weights and chains counterbalancing the weight of the bridge. Power to operate the bridge costs only four and a half cents each time the bridge is raised. Gasoline motors are also maintained in case of failure of electricity.

Other bridges are of the bascule or rocking-chair movement type. Great concrete bases counterbalance the weight of the moving span as the bridge cants upward to an 80-degree angle. A ship hustles by, and the bridge locks down in place once more. Only two swing bridges of the turn-table type are

used on the canal for the railroads, since they limit the width of the shipping lane.

### *Through the Canal*

Past the harbour light, past the lighthouse, steams a freighter; entering the canal at Port Weller, it glides between the long piers guarding the approach to the first lock. The first seven miles of the canal south from Lake Ontario lead through the intensively cultivated fields and orchards of the Niagara Peninsula. Three locks lift the ship a total of nearly 140 feet, bringing it to the foot of the escarpment.

Most impressive is the flight of twin locks at Thorold, similar to those at Gatun on the Panama Canal, but of greater height. These locks are built in double flight, so that ships may mount to Lake Erie on one side, while other ships are locking through downbound on the opposite flight. At the foot of the flight locks is the power house with its surge tank, which supplies electricity throughout the canal for lighting and operating all locks and bridges. Not far off are the remnants of the third canal, which store additional water for the operation of the flight locks.

The flight locks comprise Locks 4, 5 and 6, a triple set which together elevate the ship another 140 feet in less than half a mile. Lock 7, very slightly farther along, raises the ship another 46½ feet, bringing it to the level of Lake Erie. A guard gate above this lock is maintained in case of any disaster on the canal below.

*Opposite page. Left, top to bottom:—*

*One of the largest freighters of the Great Lakes passes through Lock 1 at Port Weller.*

*The twin flight locks at Thorold make it possible for ships to be moving up while others are locking through downbound. The steel fender-boom with its heavy cable is raised permitting the boat to pass.*

*An upbound freighter starts her climb of the Niagara escarpment at the twin flight locks. At the foot of the locks to the right is the power house, which supplies power to the whole system for lighting and operating the bridges. The tall tower is the surge tank.*

*Right, top to bottom:—*

*Activity in the twin flight locks at Thorold, showing an oil tanker downbound, two freighters, a barge and tug upbound. The steel fender-booms are locked into place, preventing any disaster to the gates. The "whaleback" noses into Lock 7 at Thorold, the last lift lock on her journey through the Welland Canal to Lake Erie.*

*Bound for Lake Erie, these tugs and a freighter must pass over the siphon culvert by which the waters of Chippawa Creek (or Welland River) are carried beneath the canal.*

*Right:—The Welland Canal runs through farming country. It is amazing to see ships apparently sailing across farm land.*





*From the height of one bridge looking down at the traffic passing under another vertical-lift bridge. Beyond is the guard lock at Humberstone, and beyond that the milling company elevators.*

*A freighter in the guard lock at Humberstone. This lock, the longest in the world, raises the vessels to the fluctuating level of Lake Erie, its lift being determined from day to day by the lake level.*



*The "made" land built out from Port Colborne into the lake. It is a busy industrial scene with roads, railroads, coal piles and derricks playing a vital part. In the distance may be seen the towers of the vertical-lift bridges in the town of Port Colborne.*



Beyond are highway and railway bridges, and the canal stretches across lush farming country. The wayfarer is amazed to see ships apparently sailing across the fields, through windbreaks of grey-green Russian olive trees, and other trees of rapid growth.

At the city of Welland, the ship steams over a most interesting feat of engineering. Where the canal crosses the sluggish Chip-pawa Creek, a siphon culvert carries the waters down and across underneath the canal. Each of the six huge tubes is large enough to accommodate the biggest locomotive. Great difficulties attended this piece of construction.

Just a mile from Port Colborne, at Humberstone is the longest lock in the world, a guard lock. It brings the vessels to the fluctuating level of Lake Erie, the lift being determined from day to day by the lake itself. The lake is given to rapid variations caused by the wind direction, and the difference in level may be as great as eleven feet. From that last lock, through the Port Colborne channel, out into the harbour with its breakwaters and lighthouses, the ship steams into Lake Erie.

#### *Canal Shipping*

She has passed many other vessels in the course of her seven- to nine-hour journey through the Welland Ship Canal. The total in 1945 was 6,210 ships. The traffic is of international character, much of it originating in American ports. Tramp steamers from the seven seas again ply up and down the lakes, picking up cargoes here, unloading there. Before the war the cargo might be a load of bulbs from Holland, poppy seed or enamelling clay, odd items of manufacture from the Scandinavian countries, or vintage wines of France.

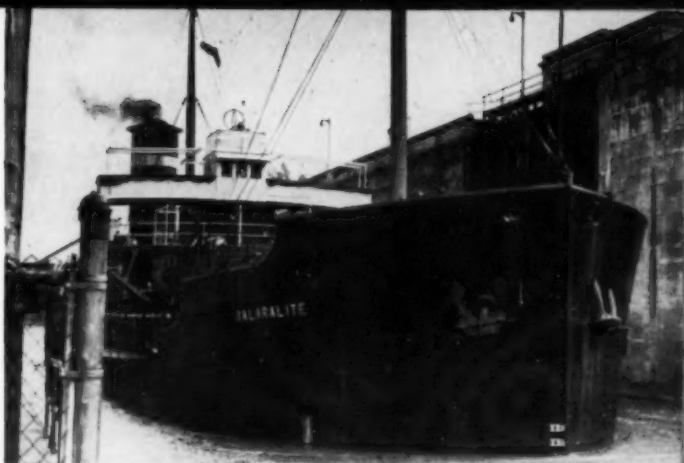
*Top to bottom:—*

*An oil tanker goes through the locks.*

*A tramp steamer from Norway loads at a dock just outside the city of Welland.*

*A tug pushes a barge smartly through the Welland Canal.*

*Unloading pulp from the hold of a freighter at the Ontario Paper Company's docks near Thorold.*





*Waiting its turn to be unloaded outside Thorold, a pulp freighter from the north shore of the St. Lawrence ties up at the dock.*

Tankers carrying gasoline, kerosene or fuel oil, with the warning red flags flying amidships, move smartly through the canal. Tugs and barges pass in orderly fashion through the locks and canal prisms. "Upper lakers" steam ponderously across the countryside carried by water. "Canalers" shuttle back and forth with cargoes of grain from the government elevator at Port Colborne, with iron ore for Hamilton, with package freight or coal. Huge pulp piles rise at the mills as the freighters bring in loads of logs from the north shore of the St. Lawrence or of Lake Superior. Sulphite, limestone, agri-

cultural products traverse the canal, since water shipping is still much less costly than any other means of transportation.

Pig-boats towed by powerful ships, gleaming yachts making passage through for regatta or cruise, whalebacks—that novelty of the lakes—and the occasional passenger liner making a cruise to the Thousand Islands of the St. Lawrence, all contribute colour and interest to the shipping scene.

No ship, whatever her home port, pays any toll for the privilege of using the canal. But captains must have a "let pass", obtained either by agreement before the navigation

*Left:—Tow boats lying at the pier in Port Colborne, waiting to be picked up. On the skyline is the government grain elevator of three million bushels capacity, with a freighter being unloaded.*

*Below:—Elevator and mill on the Welland Canal several miles from Lake Erie. The canal has brought industry to the locality.*



## THE WELLAND CANAL

season or at the canal office, to facilitate passage. They declare the nature and amount of their cargo, may pick up groceries or cans of oil from some ship chandler, perhaps acquire a carpenter or plumber for repair work on the boat as she goes through the canal.

Though tolls were abolished in 1905, a linesmen's service fee is charged. Ships up to 250 feet in length pay \$15, while larger vessels pay double that. In the old days, deck-hands or men from along the tow-path were employed to moor and cast off the lines. But in order to protect their great investment, canal authorities decided to maintain a staff of men for that purpose. A set rate was adopted, based upon what the ships had paid in previous times. Sometimes a group of yachts may be tied securely together, and go through the canal as one ship, splitting the service fee between them.

With no thought of catering to tourists, the Welland Canal has nevertheless proved of great interest to visitors. Extensive afforestation has been done along the banks of the canal, and many of the trees have now reached a considerable height. The roots bind the soil of the banks, halting erosion and, more important, serve as windbreaks, protecting the ships in the canal. The park-

like areas along the canal are not only useful, but transform a gaunt concrete commercial waterway into a zone of scenic beauty. Many varieties of birds add song and vivid life, outstanding being the flashing activities of the black-capped tern.

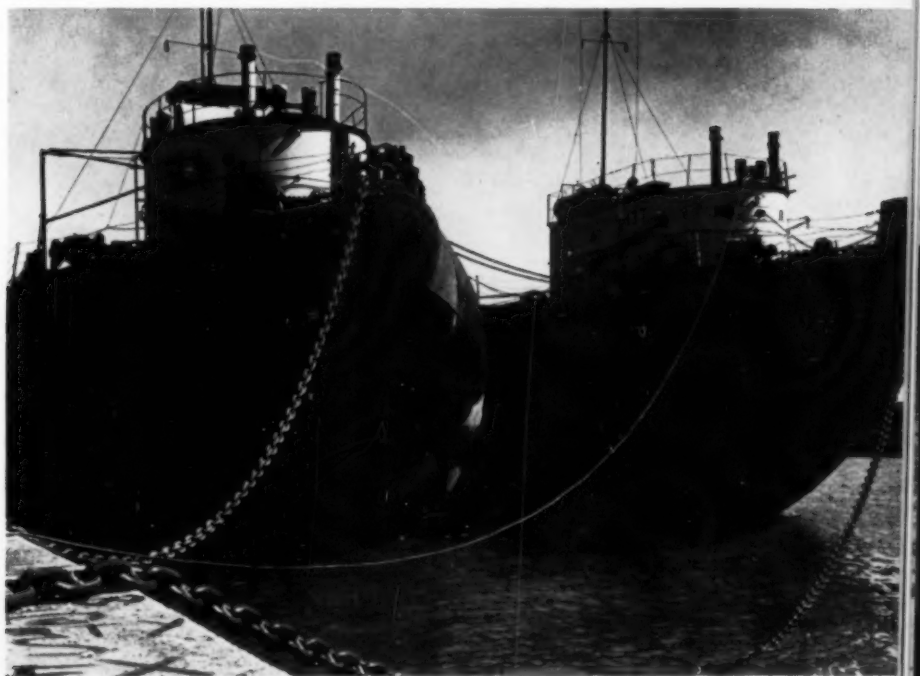
The founders of the first Welland Canal would see their dream realized in the vigorous industrial life that flourishes along the waterway. With cheap electrical power and an adequate labour supply, with transportation by rail, highway and water available to bring in raw materials, the area has had everything to make it develop and prosper beyond their imaginings.

The Welland Ship Canal has meant incalculable advantage to the whole country in the development of both internal and export trade; so much so that a distinguished observer\* declared: "It is the lung of Canada, carrying commerce into our arteries and remote veins, expelling our goods, our wheat, our minerals."

With the enlargement of the St. Lawrence canals, the Welland Ship Canal will increase in strategic importance and value. Our inland harbours will become ocean ports, and on a scale greater than ever before, "open to the commerce of the world".

\*From *The Unknown Country*, by Bruce Hutchison.

*Pig-boats waiting  
at Port Colborne  
for their tow.*





## ***Through the West Indies by Highway***

by HERBERT C. LANKS

Photos by the author

**D**URING the past decade a tremendous enthusiasm for the Pan American Highway\* has been engendered in the minds of travel-minded automobile tourists. Without a doubt this grandiose project is and will be a great factor in breaking down isolationism and facilitating progress in all the nations of two continents. But much of the enthusiasm for the touring possibilities of this great work takes little cognizance of fact. It is a long way to Panama, to South

America, to the Straits of Magellan. Few travellers have time, money, or automobiles for such a trip. To most of us—vacation-bound—the office calls in two weeks, a month, six weeks at most, from the starting date.

It is the purpose of this article to present the case for a more feasible and equally interesting international automobile tour. Already many parts of this tour are in being, though it must be confessed that other parts

\*See "The Pan American Highway" by Herbert C. Lanks, *Canadian Geographical Journal*, April 1943.

*At top:—Central Highway almost spans the island of Cuba. Pictured is a stretch near Contramestre in Oriente province, at the eastern end of the island.*



are in process, in blue-prints, or in dreams. Already an important part of it has been named—the "Sunshine Circle Route". It offers as much in the way of variety as the longer trip to Panama. It offers the definite advantage of being available piecemeal, of being a foreign tour suited to small budgets and shorter time limits.

The Sunshine Circle Route is—or will be—a land-and-water tour of Cuba and eastern Mexico, ending the Cuban part of the jaunt with shipment of one's car to Yucatan for a trip homeward up the eastern side of Mexico over that republic's National Highway Number One. There is lacking in this tour only a bit of highway to connect Yucatan to Mexico's highway system, the inauguration of a super ferry service from Key West to Havana, and the completion of a few miles of road to Puerto Fe, Cuba. There is every indication that this Sunshine Circle Route will be ready in its entirety sooner than the road to Panama. The most attractive feature of this route is that it may be taken all or in part, to suit each individual's interests, convenience, time, or budget. One may dabble with a week-end ferry trip to Havana. Or it is possible to strike out from this Sunshine Circle to cover another thousand miles of the Caribbean.

The Caribbean traveller will doubtless want to start with the Bahamas\*, closest of the West Indies. It is doubtful, though, if many will consider taking their own cars with them. Though the principal island, New Providence, has excellent macadam roads leading around and across it, they can all be traversed in half a day easily. The other islands of the group have not developed highway construction sufficiently to justify the cost of transporting one's own automobile. In all cases, wherever there are highways at all there will be found adequate local public conveyances.

Access to Nassau, chief city of the group, is extremely easy by shuttle plane from Miami. In fact, in few places on earth has the aeroplane become so commonplace as a means of transportation. This short flight seems to present an interesting synopsis of

the rise of the land from the waters as one flies first over sea-scarred shoals that give way to islands in every stage of development. One sees islets with but a few brown spots of soil and scattered bits of greenery. There are islets with scattered palms, islets with clumps of palms, islets with a few poor thatched huts where man has taken over the land, and at Cat Key the plane flies over a fine hotel with every modern convenience. Planes bring the traveller down either on Cat Key or at Oakes Field in Nassau, to the finest of luxurious accommodation combined with the finest of fishing. There are 3,000 bits of land of every size and stage of development in the Bahamas group, and somewhere among them is a bit of land to fit the interests of every traveller.

The tourist with a real interest in the exotic and picturesque will pass by the cars of assorted vintage which meet the planes at Oakes Field, and select instead a "surrey with the fringe on top". Not only do these surreys, a distinctive Nassau touch, offer more in the way of local colour; they also give the newcomer a more leisurely view of an interesting land. There is little to see in the bare sandstone and coral of the airport and its immediate vicinity, but as he draws away from this into the settled countryside the traveller encounters again all the riotous tropical colour he had seen in Miami. To the floral opulence of the countryside is added a touch no one would quite dare to add back on the continent—colourfully plastered stone walls along the roadside, and peasant huts in every soft pastel shade.

Most of the population is black, of course. There are as many kinds of black folk as there are of white folk, but the coloured people of Nassau are the right kind. There is many a ramshackle settlement in the Caribbean, but Nassau is clean and even the simplest homes in the countryside are neat and orderly. The people are as neat and pleasing as are their homes, and possessed of a degree of unobsequious good manners all too rare in the modern world.

But the Bahamas are, after all, only a

\*See "The Colony of the Bahamas" by George Kinneard, *Canadian Geographical Journal*, January 1937.





*A farm homestead on the road to Vinales, in the province of Pinar del Rio, at the western end of Cuba.*

prelude to a tour of the Caribbean. The traveller with ample time will return to the mainland and arrange to have his car shipped to Cuba, which has more than enough highways to justify the expense. At present this can best be arranged from Miami, resorting again to the aeroplane for personal transportation. Planes to Havana, running at all hours, carry seven thousand passengers a week. There is in operation at the present time even an aerial night club tour, arriving in Havana just before midnight and returning to Miami at dawn. Perhaps nowhere else has aerial passenger service been so reduced to the prosaic connotations of a streetcar ride.

But this rather costly way of reaching Cuba is only a prelude to better things to come. Shortly a ferry service is to be established from Key West, Florida to Havana,

*Below, left and right:—Carnival Day, Santiago, Cuba.*



Cuba. This super ferry service will haul several hundred cars per trip, as well as the passengers of these cars. This six-hour, fifty mile trip will cost approximately \$20 for a car and four passengers, or about \$3 for tourists travelling without cars.

The approach to the pier is perhaps as interesting as anything to be seen at the other end of the trip. Not only is Key West a fascinating city in itself, bedecked as it is with tropical plants gathered from the corners of the earth, but the approach to it is over one of the most interesting highways in the world. The end of U.S. Route One over the Florida Keys, a highway over the sea, is without parallel. This highway, laid on the right-of-way of the defunct Florida East Coast Railway, gives the automobilist, at many points where only the blue Caribbean is visible on either side, an odd sensation not to be achieved elsewhere by automobile. But, if one "beats the gun" on the contemplated super ferry service and flies from Miami, the aerial view of this slender thread of highway strung on the little dots of the keys is still a fascinating sight.

The greatest attraction of the first part of this amphibious operation for travellers is that the ferry trip to Havana and back, with little more than the city and its environs as a goal, makes an ideal week-end excursion for people with little time to spend vacationing. And one would look far to find



*La Conga drum player in Havana is ready to begin.*

a more interesting metropolis in which to spend a week-end, a week, or a month. Whatever one seeks, Havana has it in abundance. There is a new, modernistic Havana. There is a garish, ostentatious Havana, best symbolized by a capitol building which is the world's most costly in proportion to the nation's population. There is a Havana of neon-lit night clubs, Afro-Cuban noise in the guise of music, and little sidewalk cafes devoted to less hectic pleasures. Bridging past and present effectively are such intriguing makeshifts as the post office, housed in a centuries-old Franciscan convent, where the narrow stone cells once given over to monks are now occupied by postal clerks, many of whom outshine the former occupants in reverie and contemplation.

For the traveller who prefers the past unalloyed, the very entrance to Havana by water strikes the keynote of her historic past. Massive El Morro Castle standing guard over Havana's harbour is as striking an introduction to the republic as is the





Statue "Republic of Cuba" in the Capitol, Havana.

equipped with highways, and of course Puerto Rico is tiny in comparison with Cuba.

Cuba's highway system offers almost everything in the way of variety. Its Central Highway, the "backbone" of the country's highway system, ranges from good to far better than that. Parts of the shiny-smooth road westward from Havana to Pinar del Rio are unexcelled anywhere. This *Camino Central* which very nearly spans the island gives the traveller a view of cities old and new, of cane, pineapple and tobacco country to vie with the world's best, of pine-clad mountains and of cattle country waist-deep in grass, of gleaming white beaches and colourful peasant huts tucked in the shade of banana fronds or flame-blooming poinciana trees. Running off like ribs from this Central Highway are a number of lateral roads of every sort and all stages of development, leading into every nook and cranny of the republic.

Statute of Liberty to the United States. It is said that the king of Spain once expressed surprise that El Morro and the fortress of La Cabana on the hill behind it could not be seen from Seville, so tremendous were the expenditures on these fortifications in colonial days. These, and La Fuerza Castle, the great Columbus Cathedral, and numerous palaces and monasteries that date from the time when Cuba was the New World's doorstep, are edifices that will carry many generations of Cubans and visitors to Cuba back in spirit to a glamorous past.

To the automobilist with a bit of time to spend, Havana is but a starting point. Whether one arrives by air from Miami today, or by ferry from Key West tomorrow, Havana is the doorway to an intriguing adventure in highway travel. Of all the lands of the Caribbean, only Puerto Rico is better

*Posting her letter in a mail box of unusual design in the Cathedral Plaza in Havana.*





Oddly enough, despite the fact that the entire 760-mile length of Cuba lies in the same latitude, it offers considerable variety to the traveller. This is partly due to differences in terrain, but to a great extent its early history served to keep Cuba divided and different. Immensely rich and immensely desirable to pirates, its attractions were held to a minimum and held out of reach as much as possible by Spanish colonial policy. It is no mere chance that, though Cuba is called "Isle of a Hundred Harbours", only three of the six provincial capitals are on the sea. By a policy of centering the development of provinces about interior cities, it was hoped that piracy would be made discouragingly difficult. The resulting isolation in which provinces developed served to fix on them local patterns that have not yet been effaced.

The thorough tourist with time to explore the whole Caribbean will naturally cover the rich pineapple and tobacco country to the west of Havana first, as from the eastern tip of Cuba he will ship to Haiti. On the other hand, the tourist not intending to cover the other islands of the Caribbean will want first to see eastern Cuba, as he will logically ship from Puerto Fe in the west to Yucatan, Mexico.

Aside from cosmopolitan Havana, Cuban cities are inclined to be irksome to automobilists for their cramped planning—or lack of planning—and their narrow streets. This is first brought unpleasantly to the traveller's attention in the trip westward to Pinar del Rio, capital of the province of the same name. After 109 miles of as fine a highway as is to be found anywhere, the crowded narrow streets of the city and the ridiculous one-man sidewalks that make strolling even more uncomfortable than driving are a distinct shock.

The province of Pinar del Rio is more interesting. The hundreds of acres of costly



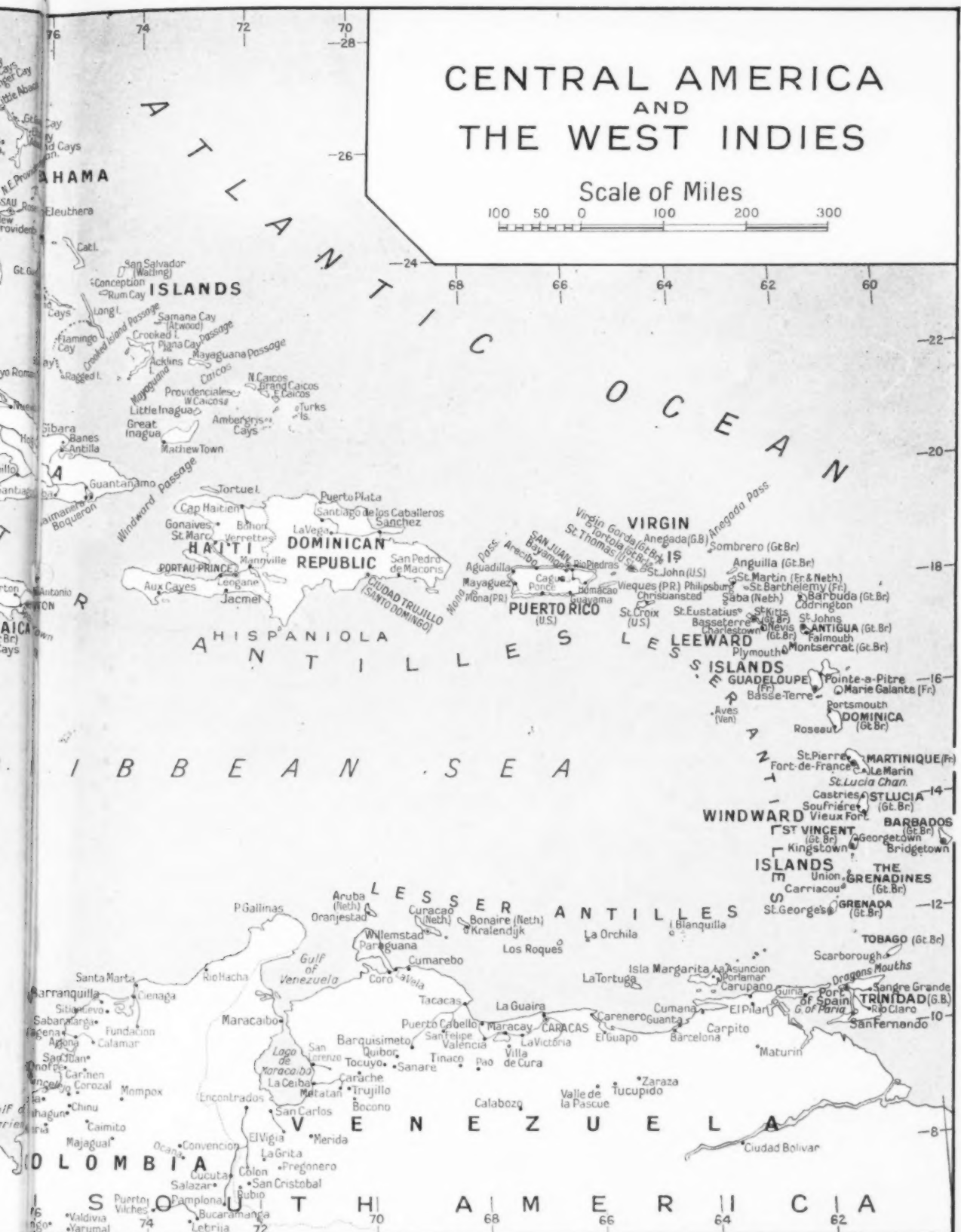
*Beyond the old Spanish cannon on La Cabana Fort lies Havana harbour.*



*Loading the traveller's car at Santiago, Cuba, for transportation to Haiti.*







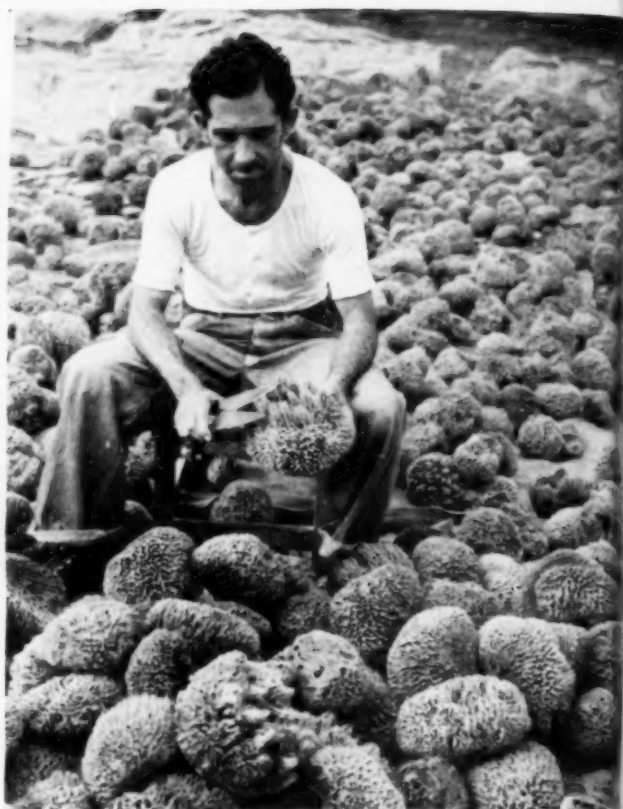


*How lunch is transported near Punta de Cartas, Cuba.*

leaf tobacco growing under muslin in the Vuelta Abajo region are somewhat of a new note in agriculture. The pineapple country, particularly in canning season, gives travelers an insight into intensive and highly mechanized agriculture. The neatly bobbed thatched huts (*bokios*) of the native workers dot the countryside everywhere and are one of the most picturesque and colourful features of Cuba. Invariably these huts are painted in soft pastel shades and tucked in the shadows of a clump of bananas, nestled under the spreading branches of a poinciana tree, or dwarfed beneath a cluster of stately royal palms.

Of considerable scenic interest in Pinar del Rio province is Vinales Valley with its odd limestone formations. The valley for the most part is rich agricultural country, but at one point the road skirts close to cliffs of fluted limestone, resembling great stalactite sheets. Caves have been eroded away at the base of some of these cliffs, and the stately palms, growing close, form grey bars over the entrances, their trunks blending oddly with the limestone fluting.

The road east from Havana offers constant temptations in its numerous lateral



*Trimming sponges at Batabano, province of Havana.*

roads. The main highway itself, as well as the side roads, are tempting alike to the voyager on pleasure bent and to the serious student. To the traveller more interested in learning than in doing, a road lures off to the north coast to the town of Hershey. This trip gives one a view of the sugar cane industry in all its aspects, terminating with the highly mechanized refinery and the model town named and owned by America's chocolate king.

The town of Hershey, Cuba, is a dramatic illustration of the facts that sugar production *can* be profitable to company and workers alike, and foreign capital *can* serve both its board of directors and its employees. Wise management has helped employees towards a higher standard of living. Model homes have been built here, and clinics and schools have been established to complement the physical improvements. Children in the streets are neat, well-dressed, clean, and there are no child beggars such as infest all too many Latin cities.



*A young vendor in Sancti Spiritus, Cuba.*

More widely appealing than the side trip to Hershey are the beguiling roads to the beaches. The traveller who resists the lure of the roads to Cojimar or Guanabo near Havana, is likely later to find himself led astray farther east, in Matanzas province, by the road to fabulous Varadero Beach. This beach, with its miles of gleaming white sand and its myriad of delightful little hotels and boarding houses, is well nigh irresistible.

Incidentally, the trip to Varadero beach leads through another model town, in this case a town owing its superiority to native capital and highly personalized civic pride. This is the town of Cardenas. Not too many years ago Cardenas was but another waterfront city, dirty, unkempt, its beauties hidden by waterfront slovenliness. The rich and famous Echebahala Rum Company, a few years ago, filled in and built up the swampy shoreline and covered it with tree-lined boulevards and drives. Another reason for Cardenas' distinction is a unique civic or-



*Cuban farm worker loading fodder near Batabano.*

ganization known as "The Society of One Thousand". This organization functions locally in other Cuban towns, but nowhere more effectively than in Cardenas. Its members are a group of public-spirited citizens pledged to contribute a certain amount monthly to civic betterment; they proudly display the organization's flag, bearing the word "MIL", in their windows. Membership is not limited to one thousand as the name might indicate. Officers are elected annually, must be rotated, and serve without pay. Civic improvements are decided upon by a board and are carefully chosen for their value to the whole community. These sometimes run into costly enterprises, such as street paving, parks, or sewage systems.

Once the automobile traveller gets past the magnificent beaches of Havana and Matanzas provinces he may feel that temptation to dally is all behind him and it will be easy to hurry on to Cuba's eastern tip. Such is not the case. The next province—Santa Clara or Las Villas, depending on whether one takes sides with the people or with the politicians who recently changed the name—is also troublesome. The most

populous province after Havana, it also contains more good side roads than any province but Havana.

Again personal tastes and interests will determine which roads lead the traveller off the main highway. The towns of the north coast will lure the gourmet, for their limitless and excellent assortment of seafood. The south will lure the traveller who elects to bask in the shades of a legendary past. To the south is venerable Cienfuegos, third city of Cuba. To the south also is Trinidad, from which Hernando Cortez set out on the mightiest achievement of man. To those whose powers of imagination are not equal to evoking the ghosts of the past, real and curious relics of another day are the rows of iron rocking chairs flanking the central park in Trinidad.

Beyond Las Villas—or Santa Clara—province Cuba becomes more completely rural. The province of Camaguey is Cuba's "Wild West", with great herds of cattle standing flank-deep in tall grass. The odd hump and distinctive marking of many of these animals denotes the Zebu strain brought from India, these cattle being suited to hot lands and resistant to ticks.

There is a difference, too, in the human side of Cuba as we move eastward. These Cubans have a darker average hue, reminding the traveller that he is approaching Haiti, the black republic, as he approaches the eastern extremity of Cuba. This darker skin becomes more pronounced as one moves up into the mountains of Oriente province.

By the time the traveller reaches this most eastern of Cuba's provinces it is likely that rural Cuba will have begun to look monotonous to him. There is little to hold one back here, though it is a large and important province, rich in mines and in its mountainous portions rich in scenic beauty. Most automobile visitors, however, will probably be intent on reaching Santiago, a city that vies with Havana in appeal.

The first sight of Santiago from the highway is indeed a thrilling experience. From a distant mountain crest it appears as a city sprawled on the hillside beside a mountain

lake. A winding approach through the mountains reveals intriguing glimpses, ever changing, until, far below the highway, it leaps into full view cradled in its nearly landlocked bay, a thin twelve-mile ribbon denoting the narrow but deep ship channel linking it with the invisible sea.

The modern side of Santiago may not be so ultra-modern as Havana, but on all other points there is little to choose between the two cities. Both are old, and filled with monuments of a glorious past. Both were rich ports and important seats of government, both bright jewels in Spain's colonial empire. Whatever Havana may excel in modernism, Santiago outweighs in pictorial qualities. Much of the city is built on a hill. Steep streets change to stairs and back to streets again. Almost every view in Santiago is a picture postcard view. Strings of laden pack mules climbing up and down the steep streets remind one that mining—for nickel, copper and manganese—is an important industry in Oriente province.

It is not to be inferred that Santiago has to offer to the visitor only a frontier touch and a pictorial quality. This city from its founding has ranked with Havana. Like Havana, the hills overlooking both sides of the channel are crusted with old Spanish fortifications and rusted with ancient cannon. Its cobblestone streets have rung to iron footsteps of the iron men who stood on this doorstep of an island and battered down the walls of a New World. Down through the centuries it has vied with Havana in historic importance. At nearby Siboney United States troops first landed in the Spanish-American War. A spectacular road winding to the top of the mountains is something of a historic monument in itself. Known as "Wood's Folly", it was built almost half a century ago by General Leonard Wood when he was military governor. It is doubly interesting as an "ancient" paved road and as an example of what may become of a paved road when it goes on and on forever with nothing spent on it for upkeep or repair.

Santiago too is as society-conscious and as culture-minded as Havana. Emilio Bacardi,



founder of the famous rum manufacturing firm, has acted with great beneficence in establishing the enchanting Bacardi Gardens and the Bacardi Museum.

Though Santiago may boast of fewer clubs than Havana, it has many and excellent clubs. Here perhaps coloured society in the New World reaches its apogee; some of the finest and most exclusive clubs are limited to coloured and mulatto membership. The Luz de Oriente Club with its beautiful building is one of the finest of these. The Aponte Club may be the world's most exclusive club for coloured society. There are, of course, excellent clubs with exclusively white membership, as well as several fine clubs that draw no colour line.

Unfortunately the part of the amphibious Caribbean cruise that is least prepared for tourists is the water hop from eastern Cuba

to either Jamaica or Haiti. Service to Jamaica is erratic, and shipping facilities to Haiti are definitely hit-or-miss. Naturally the traveller with time and inclination to cover all of the Caribbean will take in Jamaica after Cuba, as it lies almost directly south of Santiago, Cuba. The island is large enough, and its roads are plentiful and fine enough, to make it worthwhile to take one's car along.

In many ways, Jamaica is a most satisfying corner of the Caribbean. It is a verdant, mountainous land with varied and exotic vegetation and varied scenery. It is an odd and interesting mixture of culture and primitive living. It vies with Nassau and Havana in its abundant and luxurious accommodation for tourists, and it is outranked by no other Caribbean island in the interests it offers to visitors.

*Cuban lad displays lobsters at Batabano, port on the south coast of Cuba in Havana province.*



*The north coast highway near Runaway Bay in Jamaica, British West Indies.*



Jamaica's leisurely way of life is definitely English. It is, of course, one of the few English-speaking lands of the Caribbean. But the predominance of the negro here affects the manner, thought, and music of the island. The negro has developed a highly distorted and nearly unintelligible English, perhaps the most distinctive and difficult dialect on an English base to be found anywhere.

Kingston, the island's capital, is a city of considerable size and considerable interest. It is a city of contrast; its drab warehouses hide a beautiful harbour, its streets teem with donkey carts and sleek English and American cars, it has both modernistic architecture and numberless relics of a lusty past when this was a pirates' paradise. Spain and England struggled for this island, and there are many relics of early Spanish influence.

*Left, top to bottom:—Jamaican weaving a new hat.*



*The donkey carries panniers, the man rides the donkey, and the woman bears a load on her head and baskets in her hands as they follow the drive through the bamboo grove near Middle Quarters, Jamaica.*



*The lush valley of the Wag River in the interior of Jamaica.*

Perhaps the most impressive souvenir of Jamaica's past is the solid silver Communion plate and flagon said to have been given to the Church of St. Peter by Sir Henry Morgan, which the caretaker is always glad to show to visitors. The donor was the same Morgan more famed as a pirate, and particularly for his sack of Panama. Captured and sentenced to hang, then pardoned, knighted and appointed governor of Jamaica, Sir Henry made himself so unpopular that there is not today one street or building named for him, nor one monument to him, in the whole island.

The great brick shell of Fort Charles, commanded by Lord Nelson before he was twenty-one, is another impressive relic of the past, and another reminder—in the great name associated with it—that this island was once a strategic spot.

*Right, top to bottom:—Selling seed necklaces in Castleton Gardens near Kingston.*

*Banana and palm leaves frame beautiful Roaring River falls in Jamaica. More than a hundred rivers and streams, with numerous tributaries, flow from the mountainous interior to the sea.*





## COLOURFUL SCENES

*Above:—A halt for inspection at the town of Belladere, the Haitian-Dominican Republic.*

*Left, top to bottom:—Simple type of bridge across La Tombe River.*

*Haitian natives busy loading bananas at St. Marc.*

*Cutting sugar cane in a field near Cabaret.*

The logical next port of call is naturally Haiti, but getting to Haiti is easier talked about than done. There is no regular freighter service, and such tramp service as may be hunted out is inferior, in regrettable contrast to most of the rest of the Caribbean. Moreover, such roads as Haiti has compare badly with roads elsewhere in the Caribbean.

The tourist wholly pleasure-bound may elect to omit Haiti from the itinerary; the serious-minded traveller willing to exchange some small measure of inconvenience for a wealth of interesting experience will certainly





## SCENES IN HAITI

dered the Haiti side of the border between that country and the Dominican Republic.

*Right, top to bottom:—Overhanging balconies, shuttered arches and narrow streets in Cap-Haitien.*

*Cathedral at Port-au-Prince.*

*Government Palace at Port-au-Prince, the capital.*

include this black republic. It is the only New World nation, except Brazil, to depart linguistically from the Spanish-English pattern; its language is French. It is a poor and overcrowded land, a mismanaged and much abused land, and it has always been so. Not only does it lack for proper tourist accommodation; it lacks also accommodation for Haitians. Its roads are nearly all poor or worse. Yet it has in its dramatic and turbulent past and in its spectacular mountain scenery points to compensate for its tribulations to travellers.





*Left:—Medical school of the University in Trujillo City, capital of the Dominican Republic.*



*Above:—Tobacco seed beds being prepared near Caguas in Puerto Rico.*

*Left:—The ruins of San Francisco monastery in Trujillo City, Dominican Republic.*

*Below:—Haina beach in the Dominican Republic, near the capital.*



*Right:—Puerto Rican students in front of the high school at Caguas.*

Perhaps no wheeled trip in all the Caribbean is as troublesome and as worthwhile as the trip from Port-au-Prince to the north coast. It is a rough and spectacular journey over three mountain ranges, through valleys choked with jungles, past numberless and nameless native villages that are but transplanted African *kraals*, always and everywhere with the stirring beat of voodoo drums dinning in the traveller's ears. At the end of this rough road one parks the car and climbs on foot over a steep and narrow trail to the awesome ruins of one of man's most incredible accomplishments, the Citadel of Emperor Henri Christophe.

Well over a century ago an unlettered black genius reared this monument to his power, this bulwark against enslavement. Together with the bloodthirsty Dessalines and the gifted Toussaint l'Ouverture he had freed his people from slavery to the French and led them into the more galling slavery of one of the most efficient and heartless dictatorships the world has ever seen. Under threat of death and the lash Henri Chris-



tophe had forced his people to rear with bare hands this stupendous fortress. Alone and empty now, cracked by earthquake, the genius-inspired power that reared it long since decayed and fallen, the Citadel stands on a cloud-bathed promontory at the mountain's crest, a monument to ruthless genius and boundless ambition—and a grim warning of the latent power that lies in the blacks.

There is a dotted line dividing the island of Hispaniola into black, French Haiti and white, Spanish-speaking Dominican Republic. There is little difficulty in recognizing this line as one rolls over the international highway that connects the capitals of the two republics, for up to the border the Haitian highway is rather a dotted line itself. There is the sharpest of contrast be-

*Trujillo City, modern capital of the Dominican Republic, rebuilt after the tornado of 1932.*







*Left to right:—The road runs close to the river near Guayanilla in Puerto Rico.*

*Tree ferns arch over the road through Puerto Rico's national forest, El Yunque.*

*Entering the Dominican Republic from Haiti, near Elias Pina.*

*Students at the College of Agriculture and Mechanical Arts at Mayaguez, Puerto Rico.*

*The statue of Christopher Columbus in Trujillo City, Dominican Republic.*

tween the two republics that share this island, as the Dominican Republic is perhaps the most modernistic, economically progressive of Latin-American republics. Roads, schools, hospitals, public buildings, in this country are marked by almost an excess of modernism. The capital itself, Ciudad Trujillo, is by far the most modern of Caribbean cities, as the old city was destroyed by tornado in 1932. The government-owned Jaragua Hotel is the luxury hotel of the Caribbean, outshining even Shaw Park in Jamaica.

Leaving this island for Puerto Rico is a far simpler matter than entering Haiti at the other end of the island. A fleet of diesel-powered ships operating from Trujillo City

operate an efficient service and handle much of the Caribbean trade. Prices for transporting automobiles via these boats are reasonable, being whatever the automobile owner will agree to pay.

Puerto Rico is the easternmost gem of the Caribbean. There are many other islands that are farther east, but of them all only Trinidad is very important and it is more south than east. Puerto Rico is the "whitest", the most densely populated, the most modernized, of Caribbean lands. Because of its position in the war, as the United States' eastern bastion in the Caribbean, it has been brought an inordinate degree of modernization, particularly in the matter of roads, which are the best in the Caribbean. The

*Ploughing sugar cane at Arecibo, Puerto Rico.*







island's network of highways give a fair and easy view of almost every part of Puerto Rico, and the good road across the mountainous interior leads through scenery as fine as Jamaica's. Not to be missed is the drive through the famed Caribbean National Forest. At El Yunque the traveller will delight in some of the most spectacular tropical rain forest to be found anywhere. Tree ferns forty feet high arch overhead, and the densest of tropical jungles wall in the road on either side. Wherever Puerto Ricans have felt Nature wasn't doing her best, the roadside has been planted with a border of hibiscus, or the road has been walled and roofed with flame where long avenues of royal poinciana (flamboyant) trees link

their branches and shower down petals from their giant red blooms. Despite its many charms, Puerto Rico is not yet tourist-conscious. However, accommodation is adequate, and much of the island's charm lies in the fact that the tourist never feels that Puerto Rico is a show run for his benefit.

San Juan in eastern Puerto Rico is well out to sea, and beyond where the majority of travellers are likely to go, particularly those who take their cars. Conventional time limits of vacation periods are likely to hold the bulk of Caribbean amphibious automobilists down to coverage of—at most—Cuba and the Sunshine Circle tour. Once Yucatan is brought into the fold of Mexico's excellent highway system, the Sunshine Circle will be

*Center:— Cattle in the Camu River, near San Francisco, Dominican Republic*

*Below:— Cutting sugar cane at Vega Beja, Puerto Rico.*





an accomplished fact. Hundreds of thousands of people over the past decade have already travelled over Mexico's Highway Number One to Mexico City and beyond.\*

On the other hand, the traveller whose time is not limited may note that this report omits, or slights, interesting land groups in the Caribbean. The Virgin Islands, and in fact all the Lesser Antilles, have been slighted for reason. Most of these islands

have some excellent roads, but they are so small and their road mileage so limited and so well covered by local means of transportation that it is extremely doubtful if many people would feel justified in taking the time and expense to ship their own cars to the omitted islands or island groups. There is excellent plane service to all of them, and the highways of any of them may be covered in a matter of hours.

\*See "Majestic Mexico" by Renee Tallantyre, *Canadian Geographical Journal*, December 1944.

*A town in St. Thomas, one of the Virgin Islands purchased by the United States from Denmark.*



*Left to right:—Going to school in St. Thomas, Virgin Islands.*

*A street of steps in Charlotte Amalie, capital of St. Thomas, Virgin Islands.*

*Blackbeard's Tower, built in 1674 at St. Thomas, and reputed to have been occupied by the notorious pirate.*

*A Hindu priest in front of the temple near St. Joseph in the British island of Trinidad which numbers many East Indians in its population.*



There is, however, one island more than worthy of mention, although it is most practically covered from South America. It lies far to the south of the islands we have discussed, and shipping to it is done in rather a roundabout manner. Yet it deserves passing mention for its considerable interest, for the sake of the few automobile tourists who may have time and inclination to go there. This is the island of Trinidad.\*

\*See "Trinidad—Crossroads of the World" by C. O'Brien, *Canadian Geographical Journal*, April 1943.

It is not at all surprising that Trinidad has a fair mileage of good macadam roads, for this island has been furnishing the whole world with asphalt for its highways for over half a century.\* The vast asphalt lake which has supplied all this is an interesting sight. Trucks drive out on the surface of this lake of tar to haul away great chunks of it. Next day the holes from which they were taken are filled again. So great has been the drain

\*See "Asphalt Industry of Trinidad" by W. F. Hartzell, *Canadian Geographical Journal*, January 1939.



*Residence of the Governor of Trinidad and Tobago in Port of Spain, capital of Trinidad.*



# SCENES ON THE ISLAND OF TRINIDAD

*Right, top to bottom:— Up-to-date  
Queen's Park Hotel in Port of Spain*

*Hindu family near Chaugauines*

*Class is held beneath the grapefruit  
trees near Cameron.*

*Left, top to bottom:—A Port of Spain  
street vendor selects an attractive  
store window to conduct business.*

*A well-mounted Port of Spain police-  
man*





on this great tar pit that its surface is twenty feet lower now than when it was first discovered, and no one has any idea how inexhaustible it may be.

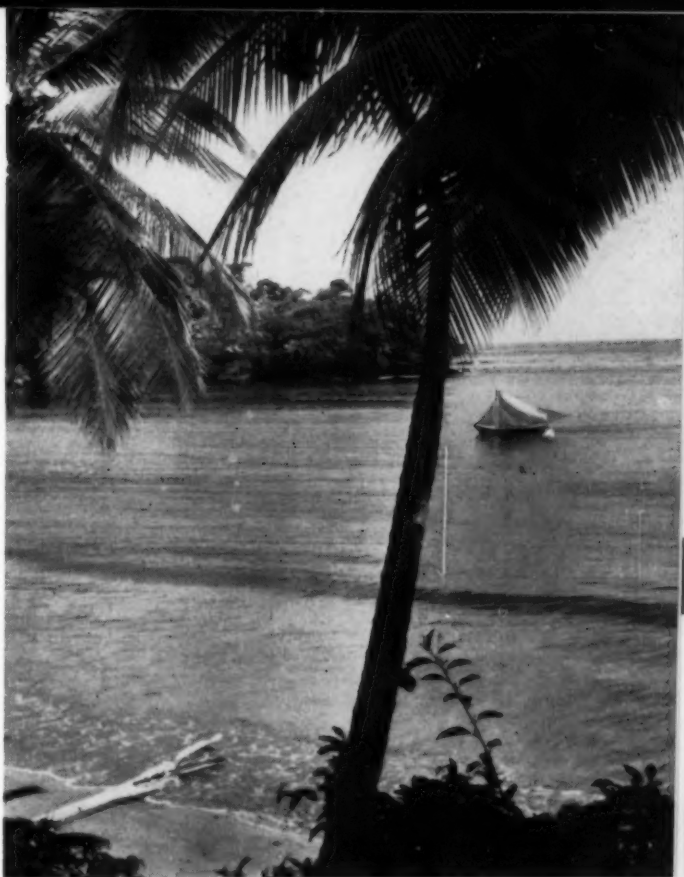
Trinidad is remarkable for the fact that it has a more varied fauna and flora than any other island of the Caribbean. The scenery of Trinidad's interior is interesting, too, but to date this island has attracted comparatively little tourist attention. Tourist accommodation is not developed as yet, and there are few good hotels except in Port of Spain. These are in no sense a match for the fine hotels of Nassau or Jamaica.

Most interesting of Trinidad's charms is its people. East Indian labour was brought in years ago, and in parts of the island the result has been the creation of a "Little India". It is an odd sight to see a transplanted bit of the fabulous India for which Columbus was searching set here on the New World's doorstep. The domed and decorated Hindu temples, the slender minarets of Moslem mosques, the shy women going about with covered heads, all strike an odd note when found on our side of the planet. Water buffalo working in the fields make the traveller wonder if perhaps he got out on the wrong side of the world.

Mixed in with the East Indians is a mélange of peoples. A touch of old Spain has been handed down here from early days, and blended in with a fresher touch from nearby Venezuela. There are descendants of early French refugees. There are Chinese brought in, like the East Indians, as labour. There are English bookkeepers and "builders of empire". They all make Trinidad an interesting place.

In closing let us reiterate that the best feature of Caribbean travel is that it can be fitted into time limitations ranging from a hectic week-end to a long and busy summer. It can be fitted into a pair of twenty dollar bills, or the trip can use up a considerable sum. One may hurry back from Havana, or dawdle all the way out and down to Trinidad. However much or little of the Caribbean one takes, there is one thing sure: none of it is boring.

*Right:—The Port of Spain version of an "English Bobby".*



*Balandra Beach, one of the beautiful stretches of Trinidad coastline.*





## ***Mapping A Country***

by LEWIS SILKIN\*

**E**NGLISHMEN are apt to think of their small country, and other people are even more ready to think of her, as a land in which everything has been discovered long ago and in which all the resources have long since been tabulated and indexed. I have often heard Englishmen lamenting this fact. They wish, they say, that they lived in a vast country like Canada, where there were still great territories scarcely explored and not yet fully mapped even from the air.

I understand that view of Britain, but I believe that it needs qualification. There is no country so familiar that a concentrated

study of it from new points of view will not disclose fresh resources in both its land and its people.

In fact a new portrait of Britain is being painted today, which is already disclosing new resources—and problems—of which few Englishmen were aware, and of which no single Englishman could have given an account.

The work like so much other good work in Britain today, is proceeding quietly. It has been entrusted to a group of young girl cartographers working under expert guidance within a stone's throw of Piccadilly. I doubt

*At top:—A section of the "Land Classification" map compiled by the Land Utilization Survey Department of the Ministry of Town and Country Planning showing southwest England.*

\*Minister of Town and Country Planning in Great Britain

if one in ten thousand among the crowds that throng the Piccadilly pavements is aware of it. It is nevertheless a long-range undertaking of sterling importance; and I believe that many Canadians would appreciate its value and like to know something about it. Let me trace the story for you from its beginnings.

The seeds of this new enterprise were sown before World War II. It had come to be recognized in discerning quarters that we did not have as thorough an inventory as we needed of the natural and economic resources which the 56,000,000 acres of this old island of Britain contain. As a result we were not using our land, and were not planning its future uses, to the best advantage. To take a single example, we had been building blindly on good agricultural land, which should have been reserved for the production of food. That was a waste of good resources—how grave a waste, war was soon to teach us. It is the sort of waste that we must avoid in the lean post-war years; the sort of waste that can be prevented, but only through the patient accumulation of facts by trained and expert minds and their clear presentation in a form which the layman can understand.

In 1938 a committee, appointed by the Town Planning Institute under the chairmanship of Sir Leslie (now Lord Justice) Scott, recommended the setting up of a commission to carry out a national survey of Britain's natural and economic resources. The National Atlas Committee of the British Association, in submitting proposals a year later, said:

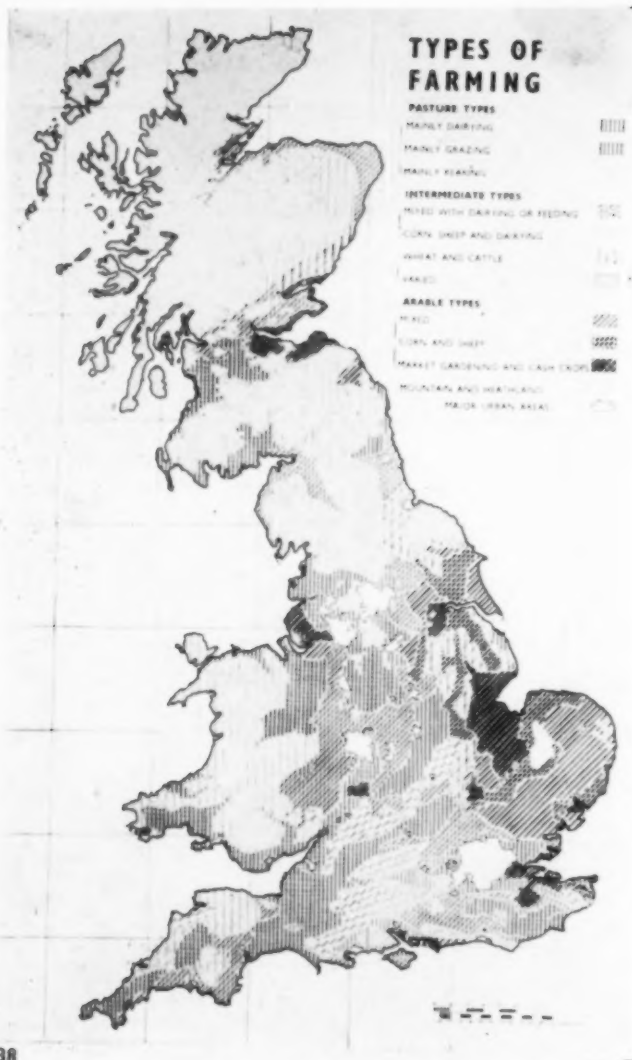
"The proposed Atlas aims at a strictly objective and scientific presentation of the natural conditions, natural resources and economic development of the land . . . and of the distributions, occupations, movement and social conditions of the people. It is believed that the publication of such an Atlas would mark a great step forward in the dissemination of accurate knowledge of the country among the general public. It would also be of service to administrators, public men, educationalists and

research in many fields, since it would present in convenient form the data upon which many conclusions and decisions of national importance must be based."

Early in the war Lord Reith, then Minister of Works, set up an Advisory Committee to consider the preparation and publication of maps required for land planning. This Committee took a wide view of their task. They looked beyond the immediate demands of land planning to larger needs and to the long-range target of the National Atlas, which the British Association had proposed. It was agreed that the Ordnance Survey should publish maps on a scale of 1/625,000 (or about 10 miles to the inch) and that these maps should all bear the new national grid, which provides a convenient system of comparison and reference.

So it came about that in England a Maps Office was set up, which became part of the new Ministry of Town and Country Planning in 1943. A similar office was opened in Edinburgh within the Department of Health for Scotland; and the two offices have worked ever since in close collaboration. The London work, at any rate, has not been without incident. There was a night, early in 1944, when a German bomb descended on the Maps Office in St. James's Square and put it out of action. The staff was moved across to offices high over Piccadilly Circus; and there the flying bombs pursued it. In those days a girl cartographer, emerging from shelter upon the "All Clear", would have time to draw a few lines only on the map in front of her before the next warning sounded. But the work went on. As Minister of Town and Country Planning, I am today responsible for the English share of it. Let me tell you how our program stands in the opening months of 1947.

The material on which we are working falls broadly into three classes: natural features (such as soil types, land uses and economic minerals), the works of man (from railways and roads to public utilities and mines) and the distribution of human resources (including population statistics and



An abridged version of the "Types of Farming" map of the United Kingdom, omitting some of the complex detail of the Land Utilization Survey original, prepared for easy reproduction. Map shows mountain and heathland areas, major urban areas, and three main types of farming land, subdivided as follows: pasture types—mainly dairying, mainly grazing, mainly rearing; intermediate types—mixed with dairying or feeding, corn sheep and dairying, wheat and cattle, varied; arable types—mixed, corn and sheep, market gardening and cash crops.

Courtesy Association for Town Planning and Regional Reconstruction

administrative areas). This material has to be collected from a great variety of sources, published and unpublished, central and local. Published sources range from the annual surveys of the Board of Trade and the census returns to Lloyd's Register and lists of quarries and mines. The maps, into which this material is worked up, are printed on two sheets, one covering Scotland and the north of England and the other the rest of England. Each map measures about five-and-a-half by three-and-a-half feet—a size at once suitable for wall display and large enough to allow of all towns and villages being shown. Here is a list of the maps which have already been published and of those which are in preparation:—

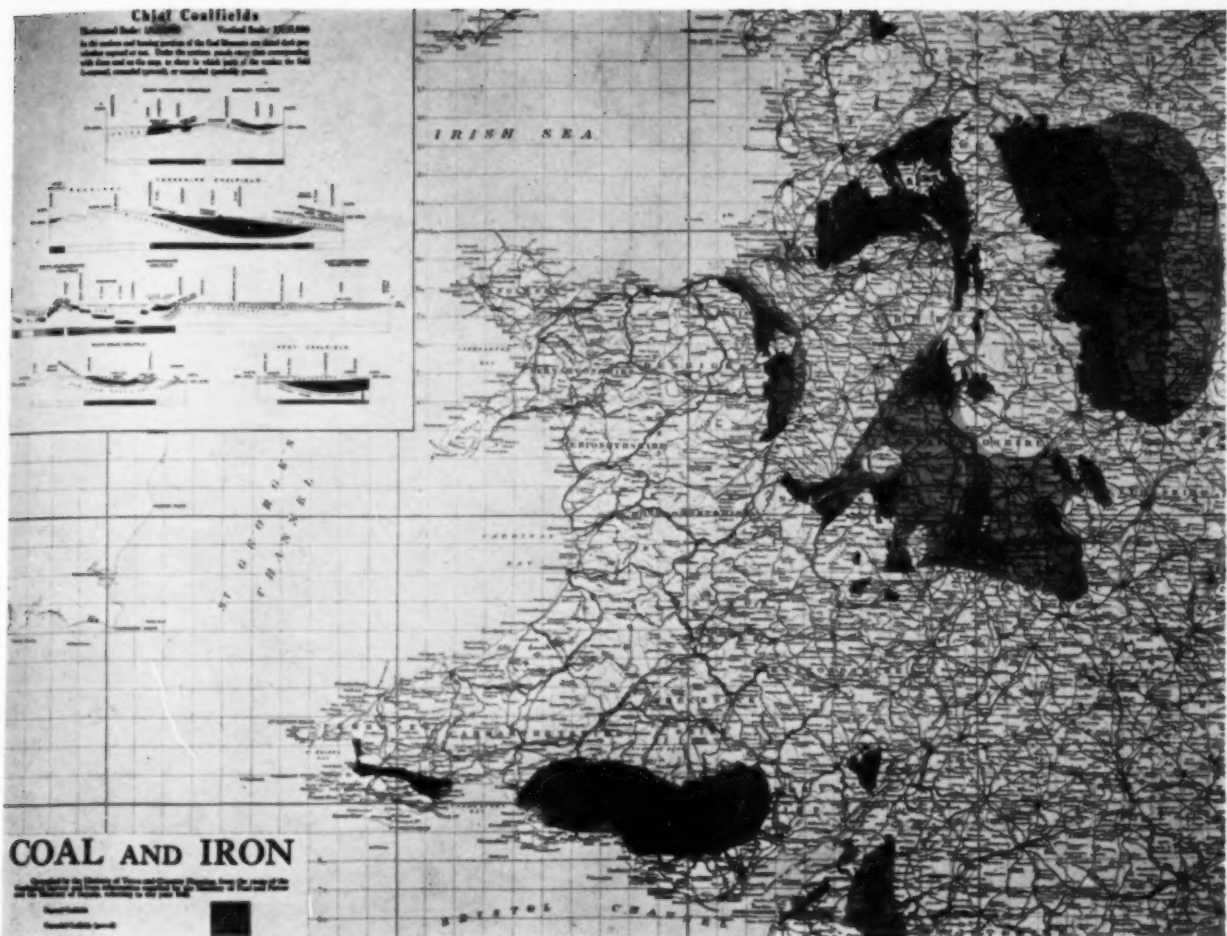
#### Published

Base Map  
Topography  
Land Classification  
Land Utilization  
Types of Farming  
Vegetation (Sheet 2—grasslands)  
Coal and Iron  
Roads  
Railways  
Electricity (Statutory supply areas)  
Iron and Steel  
Administrative Areas  
Population Density (1931)  
Population of Urban Areas (1938)

#### In Preparation

Physical Map  
Annual Average Rainfall (1881-1915)  
Vegetation (Sheet 1—grasslands)  
Solid Geology  
Drift Geology  
Sandstone  
Limestone  
Sand and Gravel  
Igneous and Metamorphic Rock  
Electricity (transmission lines)  
Gas and Coke  
Industry  
Brickworks  
Population Changes (1921-1931)  
" " (1931-1939)  
Migration (1921-1931)  
" (1931-1939)





*Wales and Midlands section of the "Coal and Iron" map. The three shades of grey (dark to light) indicate respectively exposed coalfields, concealed coalfields (proved), and concealed coalfields (probably present). Separate iron deposits are indicated in pink. Inset are sectional drawings of particular coalfields (South Lancashire, Yorkshire, South Wales, Kent, etc.).*

Each of these maps contains material for a long and learned lecture. If I were to attempt to describe them here with all their implications I should certainly weary my readers. Even if I were to catalogue the more obvious features of each, I should merely confuse them. I should have to enumerate, for example, the 45,000 miles of roads which the road map delineates, distinguishing each according to its class, giving the official route numbers, showing the whereabouts of each of the 1,100 wayside telephone boxes which the motorists' associations maintain, marking the ferries which travellers must cross.

So let me give you a glimpse of just one map—"Coal and Iron"—which lies beside me as I write. It is a soberly-coloured sheet, with the British coalfields tinted in three shades of grey and the iron deposits, where they are separate, in a subdued pink. These three tints of grey distinguish respectively the exposed coalfields, the concealed but proved fields, and the concealed fields that can as yet be assumed only to exist. Black dots, varying in size according to the numbers of men employed in each, show the mines in current production. With the help of these tints and simple marks you can, at a glance, pick out on this map at one end of



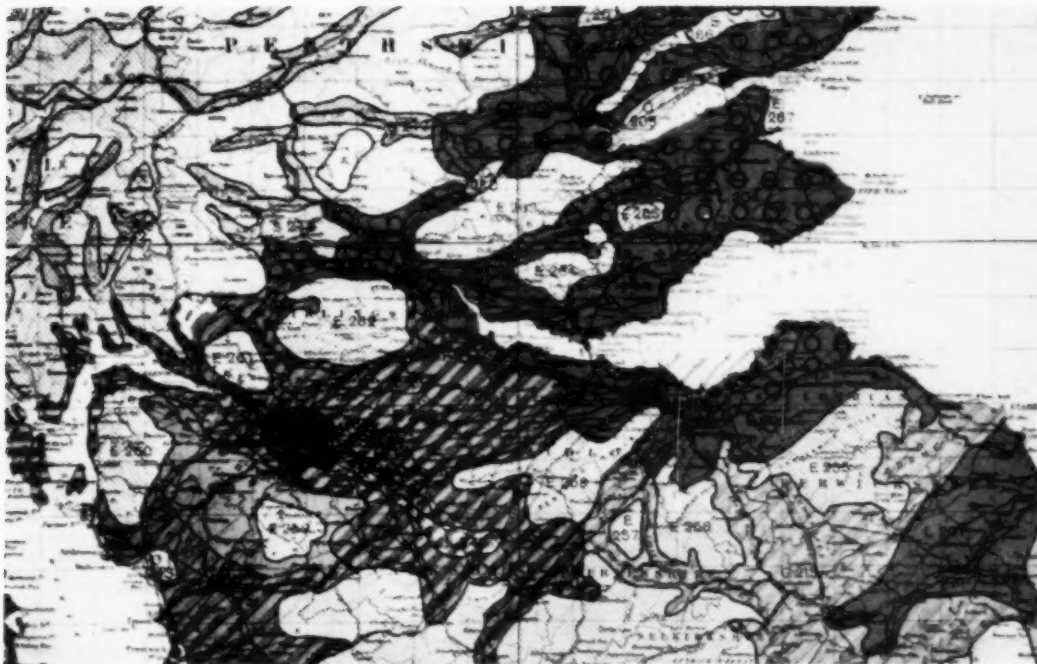
The "Types of Farming (England)" map, compiled by the Land Utilization Survey, divides the country into 21 classifications, shown on the map by different colours (and colour combinations). Main divisions, each of which is subdivided, are: Pasture Types, Intermediate Types (including mixed farming, dairying, fruit, vegetables or hops); Arable Types; and Various (including land of small agricultural value, marshes, urban areas and various farming on mixed soils).

In this section of the map of the country around London, 16 types of land are shown. The central dark patch (red on the map) shows an urban area (London); areas marked B indicate dairying supplemented by other enterprises; areas marked F (diagonal stripes) indicate mixed farming with substantial dairying side; areas marked L (N. and NE. of London) indicate mixed farming based on arable production; areas marked Y indicate marshes.

the scale the coalfields that have seen their day, at the other the coalfields of Britain of the future. The town-planner—to take my own special interest in the subject—knows that in the worked-out fields he must look twice before he plans to build for fear of the ground subsiding. For the coalfields of the future, now lying deep below pastures and arable land, he must be ready with long-range schemes not for agricultural but for mining communities. What opportunities for foresight, wise planning and economy that starkly recorded picture reveals! And in the corner of the map are delicately and accurately drawn a series of generalized sections of Britain's main coalfields which

should be invaluable for compilers of future geographical textbooks.

The great test, in my experience, of a fruitful undertaking is not the public attention which it attracts in its early days but its capacity to meet and bear novel and unexpected demands upon its original design. It is easy to see that this series of maps, and the National Atlas in which I am confident that they will one day be embodied, will serve, as the British Association foresaw, purposes of a wide variety. They will be invaluable to governments and administrators, invaluable for study of the national defence. They will be essential tools for social and economic research workers. They



The "Types of Farming (Scotland)" map shows five main divisions of land types plus urban areas (as opposed to the English threefold division plus "various"). The five types, each of which is subdivided, are: Arable with Livestock Feeding; Livestock Rearing with Arable; Dairying; Hill Sheep Farming (including areas mainly deer forests); Crofting.

In the section of map illustrated, the area between the Firth of Forth and the Firth of Clyde, 11 types of land are shown. Dark patches are the urban areas of Glasgow and Edinburgh; areas marked E indicate hill sheep farming; areas marked F (diagonal stripes) indicate dairying, based on mixed arable and permanent or long ley grass; areas marked L indicate arable with livestock feeding, with crops sold off the farm, the superimposed O meaning seed potatoes, and T meaning timothy hay for sale; area marked P indicates arable with livestock feeding, with market gardening locally. The superimposed closed circles ● represent early potatoes.

will be a boon to teachers. The naval and military education authorities are now using them freely.

Already these maps have excited interest in other countries. Danes and Dutch, Arabs and Chinese have been among the visitors to Britain's Maps Office during the past year. You might have expected difficulties of interpretation; but maps have the international virtue of speaking for themselves in any company. At home they will have many personal uses—for example, to the family planning its holidays and the overseas visitor plotting his tour. The material thus assembled is already meeting modest unanticipated needs. Many businessmen

have sought information about the future population of the London area. Firms of biscuit manufacturers and bacon curers, to quote a couple of concrete instances, have come for guidance in the siting of new works.

In these early enquiries I see a token of the unforeseen services which this recording of Britain's resources is destined to render. In such patient and accurate amassing of facts, in such clear presentation of them as these maps exemplify, lies one of the best insurance policies that any country could take out in preparing itself to steer a straight course into the uncharted future.



## ***Pan O' The Mountains***

by  
HARRIET GEITHMANN

*Rocky Mountain goats.*

Courtesy American Museum of Natural History

**"D**ON'T—go there, you idiot; you can't climb that!" shouted the great mountain guide of Washington, Joseph T. Hazard, as he and three other members of The Mountaineers watched with intense interest the alpine prowess of a Rocky Mountain goat in the Cascade Mountains. While Joe and his climbers were slowly conquering Summit Chief Mountain, towering 7,300 feet above the Pacific, a quarter of a mile away, "Pan o' the Mountains" was working his way up the rocky ledges of Little Big Chief, a neighbouring peak on the Cascade Divide at the head of the Middle Fork of the Snoqualmie River just south of Dutch Miller Gap. When the going seemed all but impossible and dangerous even for a goat, Joe yelled his warning at the top of his lungs, forgetting for the moment that Pan did not understand English.

As the climbers watched the goat, he leaped his entire length from ledge to ledge. Finally he attempted a leap that was clearly beyond him. It was longer than a good

goat-length above him. His front feet just reached the rim of the desired ledge but he could not pull himself up. As usual in these leaps, his hind feet struck against the side of the cliff. Pan o' the Mountains was not dismayed even though the human mountaineers expected momentarily to see him converted into mincemeat. Meanwhile, the goat, pushing all fours against the cliff, turned a complete somersault in the air and landed right side up on the ledge from which he had leapt. Then, apparently in the mood for more excitement, he thrilled his audience by picking his way carefully down to a snow-finger which was clinging as steep as snow will cling to a rocky, wind-swept chimney. There he bunched all four of his feet together and glissaded down, down, down, cutting the snow with his sharp hoofs and charging the air with sparkling snow. Voting him the "monarch of the realm and past master of his environment" the alpinists continued their summit climb.

This dramatic incident, witnessed by Joe



Hazard and his climbers, presents a graphic picture of Pan o' the Mountains in action. That he is a daring character of the heights is denied by no one who knows him. Not only is he as nimble as Jack who jumped over the candlestick, but he carries beneath that shaggy coat of his the intrepid heart of a lion. The treachery of rocky slides and avalanches of snow and ice fail to disturb his superb equanimity or jar his nerves, if he has any. The steepest of cliffs and crags hold no terrors for his valiant spirit. Nonchalant is he in the face of thundering ice as it plunges from the ice wall above to the boulders below in a cloud of crystal dust. Contented in his rocky niche or cavern on the brink of eternity, is the Rocky Mountain goat. He has captured an element of security from his arch enemy the mountain coyote. The bear, wolf and mountain lion that prowl along the timberline trails far below are not unacquainted with his leathery hide and dagger-horns, so they usually treat him with great respect.

"Live as on a mountain," Marcus Aurelius counselled the men of his realm, but Pan does even better. He actually lives on the alpine heights, far above his plundering neighbours below. Like John Burroughs, the naturalist, Pan prefers to "flock alone". Especially does he refuse to forage and flock with the mountain sheep. He chooses a world without a fence, and safely beyond the outlaws of the lowlands.

With his shaggy white coat, which reminds one of Spitz dogs and Angora cats, Pan makes an impressive appearance. Behind his chin hangs his short beard. His chest is well protected with a heavy breastplate of long shaggy tufts of hair. This same white coat protects him both summer and winter. His nose, feet and horns are black as ebony. His feet are equipped with heavy square "hoofs of steel", knife-edged and padded, ready for clinging to the cracks and crevices that crisscross his rocky ledges. His knees are low and his "forearms" are made to reach the ledges above. His thin, black horns, scimitar like, are the kind that come to his rescue in a hurry when an enemy

deserves disembowelling. Standing on his perilous perch limned against the blue canvas of the sky, Pan commands the attention of those lucky alpinists who get within earshot and eyeshot. With his high and heavy shoulders which he hunches up in a belligerent attitude, this phlegmatic animal stands about three feet in height, and weighs from 200 to 250 pounds. He looks solid with that old-world dignity that he brought over with him yesterday from the frozen continent beyond today's Bering Strait. As his spotless coat is thick, so is his hide, which is reported to be even thicker than that of the buffalo, especially on his rump. Sitting on his haunches like a dog, he needs a tough hide to protect him from the snow, ice and rock.

Those friends of his who have followed in his footsteps for years and gathered bits of his fine snowy wool off the bushes along the trails where he has passed by, have studied his food habits. The summer finds him climbing, and grazing as he goes, on bits of moss, stunted mountain grasses, sedges and dwarf willows. Favourites on his menu are the water leaf (*Phacelia*) and mountain sorrel (*Oxyria digyna*). Late in the summer afternoon he may thread his way down to the little alpine meadows not so far from timberline where he can forage for a square meal. Here he enjoys the small red huckleberry, the blackberry, mountain bramble, Oregon grape, twin flowers and alder buds. In the winter he seeks out a forested retreat where he becomes a little more wary of his foes.

Professor J. B. Flett, one of the beloved members of The Mountaineers, has trailed the black heels of Pan for a quarter of a century, following him up and over the mountain ridges, believing that wherever Pan went he could follow. He found many of these trails cut out of solid rock by generations of the Rocky Mountain goats. One brilliant summer day found the botanist and another mountaineer face to face with Pan, the big billy himself. The gentle and daring Professor, knowing that Pan possessed a big bump of curiosity, hung a large white handkerchief from his shirt collar, to simu-

late a goat's beard. Then Pan annoyed by such an apparition stamped his feet, shook his head ominously and threw up his hind quarters. The Professor tried to show Pan what he looked like by patting the snow with his hands and flinging his legs up in the air. He even ba-ah-ed at him. Pan's curiosity knew no bounds. At this crucial moment in the comedy of man versus goat, the other mountaineer hiding behind a boulder laughed aloud. Pan leaped toward the glacier and promptly disappeared around an icy hummock. In a few minutes the big billy was followed quietly by a band of goats in single file.

In summer time, Pan is frequently followed by one or two kids. These kids, aged one month and more, seem to have no difficulty in trailing at the heels of their intrepid parents, up, up, up the vertical paths. During the past twenty years the population of the tribe of Pan has remained more or less stationary. He is still at home in certain wilderness areas of Washington, Oregon, Montana, Idaho, Alaska and British Columbia. It is not an uncommon sight for the average visitor to Iceberg Lake in Glacier National Park to see Pan and his band threading their independent way along the perilous ledges and rocky shelves high

overhead on the face of the precipitous cliff that rises above the iceberg-dotted lake. It was there, while I was knapsacking through the park on foot and on horseback, that I caught my first glimpse of this distinguished member of the antelope family, for that is what he is, this Rocky Mountain goat with hoofs hard as steel. His nearest relative is the chamois.

To know him summer and winter by his poetic name of Pan or scientific name of *Oreamnos montanus*, or by his everyday name of Rocky Mountain goat, is to know one of the noblest of animals that treads the planet Earth today. To follow his long migrations from the frozen wastes of Asia across the old Aleutian isthmus, that strip of land between two icy oceans, to the present day, when he may be found in the high country of the Sawtooth Range of Idaho, the Cascade Mountains of Washington just north of Lake Chelan, the Rocky Mountains of Montana, the Coast Range of British Columbia and various zoological gardens, is to view the changing globe through his far-seeing eyes. To know Pan even at a cool, respectful distance is to admire him and to admire him is to admire the qualities for which he stands, fearlessness and courage in the face of odds.



Photo by Byron Harmon

## EDITOR'S NOTE-BOOK

Lyn and Richard Harrington are a couple who delight in the Canadian scene. Their team-work is so good—for Mrs. Harrington does the writing and her husband the photography—that they have been able to turn what began as a hobby into a full-time career. Mrs. Harrington is a native of Ontario and graduate of the University of Toronto, and English-born Mr. Harrington is an X-ray technician. Together they travel by whatever means present themselves—canoe or bicycle, lake-boat or train, or on foot; they then record interesting and graphic accounts of the country they have seen. Readers will recall their earlier contributions to the Journal.

\* \* \*

Herbert C. Lanks' first-hand study of the Western Hemisphere has occupied his full time for a number of years. The result has been several books and many articles, a remarkable collection of excellent photographs, documentary films, and many lectures. Mr. Lanks laid the foundations for his work in the Americas by specializing in Spanish culture and international relations at the Universities of Pennsylvania and Mexico, followed by journalistic assignments in Spain and North Africa and foreign service in Latin America. A pioneer in motor travel, Mr. Lanks tested for himself every year the progress of the Pan-American Highway and was the first man to drive through to the Straits of Magellan. His driving also took him north—to the Alaskan Arctic. Recently Mr. Lanks has been exploring possibilities for road travel in the West Indies and he will shortly be publishing a record of this trip in book form, under the same title as our article, "Through the West Indies by Highway".

\* \* \*

The Rt. Hon. Lewis Silkin became Britain's Minister of Town and Country Planning in 1945. In "Mapping a Country" he has written an informative account of the activities of one department of his ministry—the Maps Office. In this Office material compiled by the Land Utilization Sur-

vey Department, in co-operation with the Ordnance Survey, is made into detailed and comprehensive maps of the natural and economic resources of the United Kingdom. Little is known to the public about this work and we believe our readers will be interested to learn from this authoritative source of the steps being taken to compile a comprehensive map survey of Great Britain.

\* \* \*

Harriet Geithmann is a native of Wisconsin. She has travelled extensively and contributed to many magazines. Miss Geithmann studies with keen interest the life of the birds and animals of North America.

\* \* \*

## AMONGST THE NEW BOOKS

(Inquiries regarding books should be directed to the publishers in Canada)

*The Country Diary of a Cheshire Man*

by A. W. BOYD

(Collins, London and Toronto, \$3.50)

Mr. Boyd, of course, knows the meaning of "grig, a snig and a peckled poot" (heather, an eel and speckled pullet), since you cannot be accepted as a real Cheshire man unless you do. This book, selected from the country diary written weekly since 1933 for the Manchester Guardian, shows in every paragraph how thoroughly he knows his native county, its birds and beasts and insects, its varied aspects as the seasons come and go, its flowers and farmlands, and his friends and neighbours, whose observations and country lore richly supplement his own.

Cheshire is particularly favoured in the diversity of its wild life. In the east are the hills and moorlands of the Derbyshire and Staffordshire border; then come foothills and cloughs merging into the fertile Cheshire plain. Farther west again is the peninsula of Wirral between the wide estuaries of Mersey and Dee. The county contains forest and heathland, marshes, forest pools and large plantations famous for rich insect fauna. "Most important of all, Cheshire is a land of meres where water-birds, fish and plants of great interest flourish".

Visits to Finland, Sweden, Spain and Morocco furnish charming essays, especially on bird migration. Ornithologists will enjoy his observations on the differences between English birds and their foreign counterparts. Though birds occupy first place in his regard, botanists and entomologists will find abundance of the lore dear to their hearts. Folk-lore, too, crops up here and there. A gatherer of wood betony informed him that it will cure everything. Another local worthy declared that with the help of betony "if a man has nineteen devils in his heart, I can cast twenty-one out".

(Continued on page XII)

## Summer School in GEOGRAPHY



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(Continued from page XI)

As Mr. Boyd observes, few herbs can claim to do better than that.

After reading this charming book, we can understand the author's repudiation of Hilaire Belloc's description of the Midlands as "sodden and unkind". He adds "not that one really cares what those who love the South Country think of us!"

The illustrations from photographs are excellent and there is a good index.

F. E. FORSEY

\* \* \*

*A Naturalist in Canada*

by DAN McCOWAN

(The Macmillan Company of Canada, Toronto, \$3)

This is a natural history of Canada in a supremely readable form; the kind of a book that you will have to hide from the boys and girls of your family if you want to read it yourself. The informal talks on nature which made Mr. McCowan the joy of thousands of radio listeners all over the Dominion brought insistent demands for their publication in book form. Here in these forty stimulating chapters one can renew the pleasure and excitement stirred by that pleasant voice as it shared with us his amazing knowledge of wild life, its

wonder and mystery, its myriad manifestations, and marvel once again at his very delightful faculty of imparting seemingly inexhaustible stores of information.

The chapter titles are significant and charming. One could make a game of guessing what would be revealed under some of the cryptic headings. The Prong-horn of the western plains, The Honey-Bee at home, The Common Crow, Edible Plants, The Record of the Rocks, are evident enough, and To-Morrow will be Friday quite clearly relates to Canada's wealth in fish and fisheries. These do not tax our powers of divination, but what could one make, at first sight, of The Black Ploughman, Pigeon's Milk, Winged Thunderbolts, The Melting of the Ice, The Islanders, until the first proves to be a dissertation on moles, the second on the food of birds, the third on falcons and hawks, the fourth on glaciers and The Islanders a most interesting and amusing account of the White Pelicans, "whose ancestors were here ere the Rockies were upraised."

The illustrations are from photographs by the author who proved his skill in his lovely *Outdoors with a Camera in Canada*, the frontispiece "Mountain Caribou" by Carl Rungius and sketches by Bruce Horsfall. It is worth mentioning that the print is exceptionally large and clear, the format of the book excellent and that it possesses an adequate index.

J. E. FORSEY